FIG.1

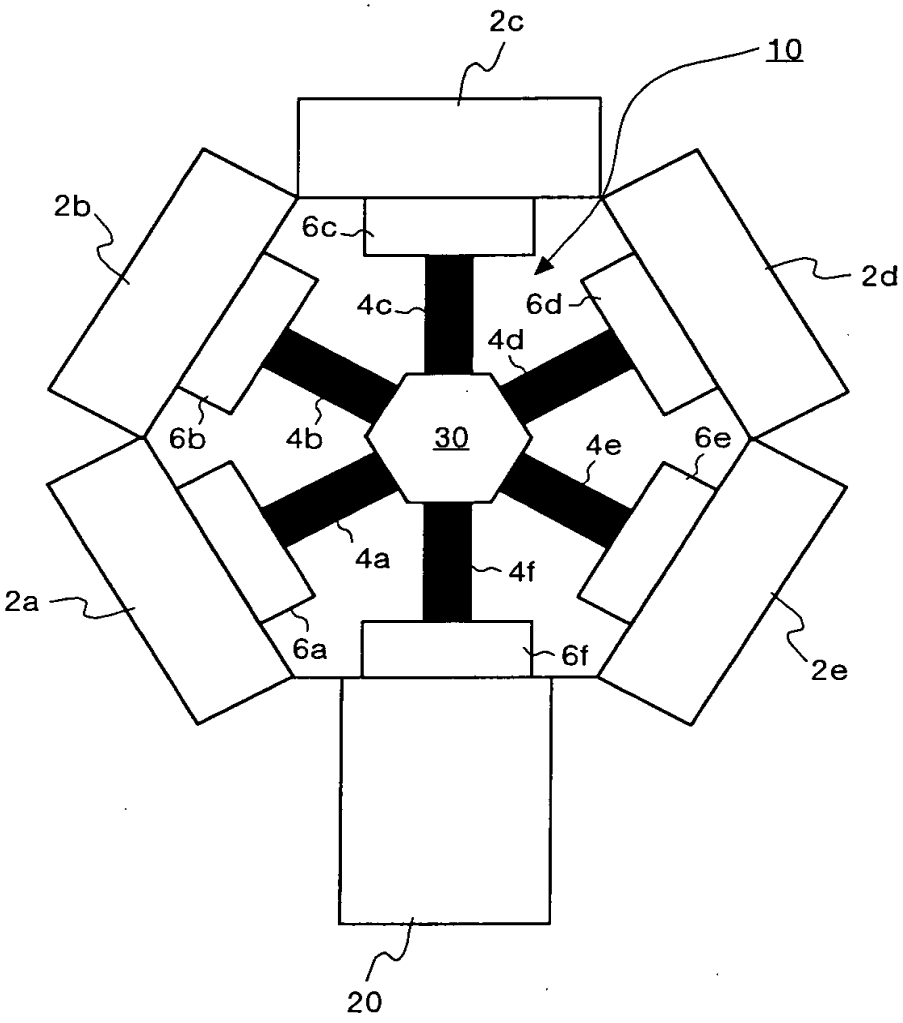

FIG.2

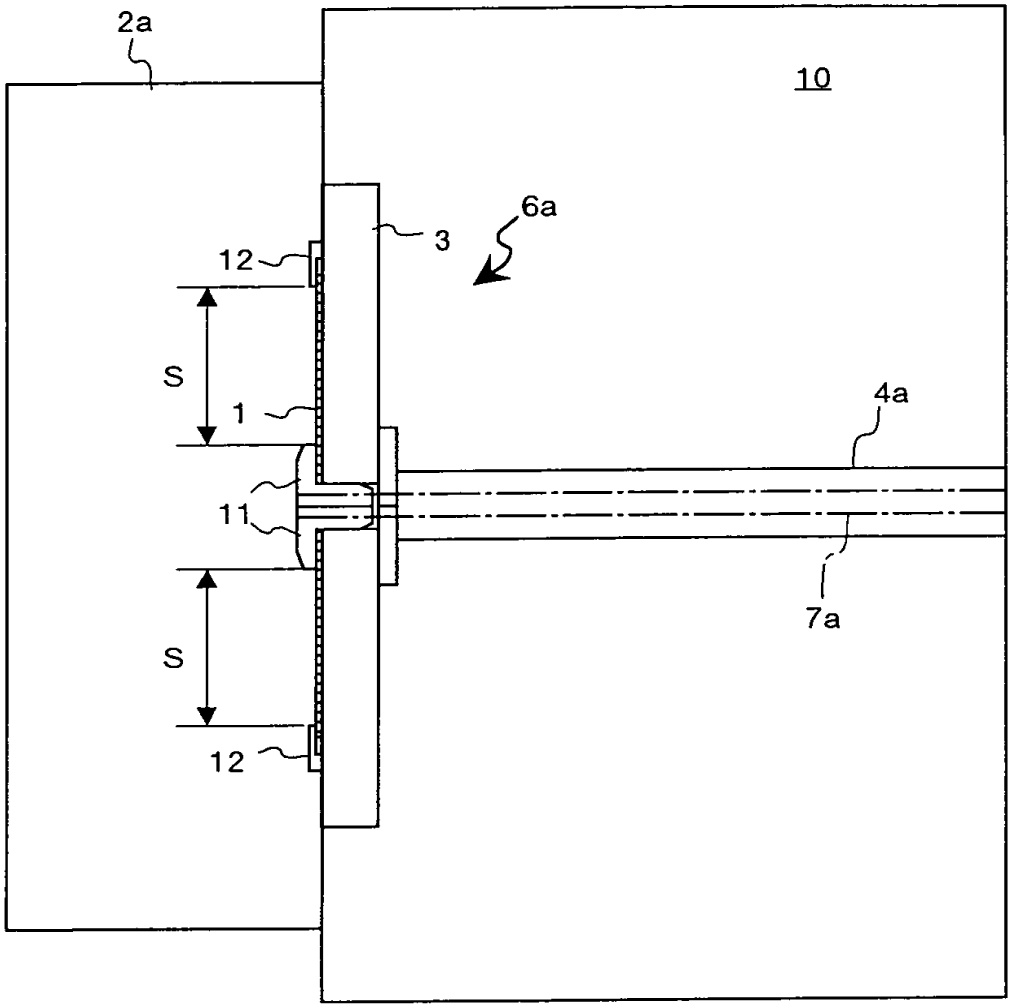

FIG.3

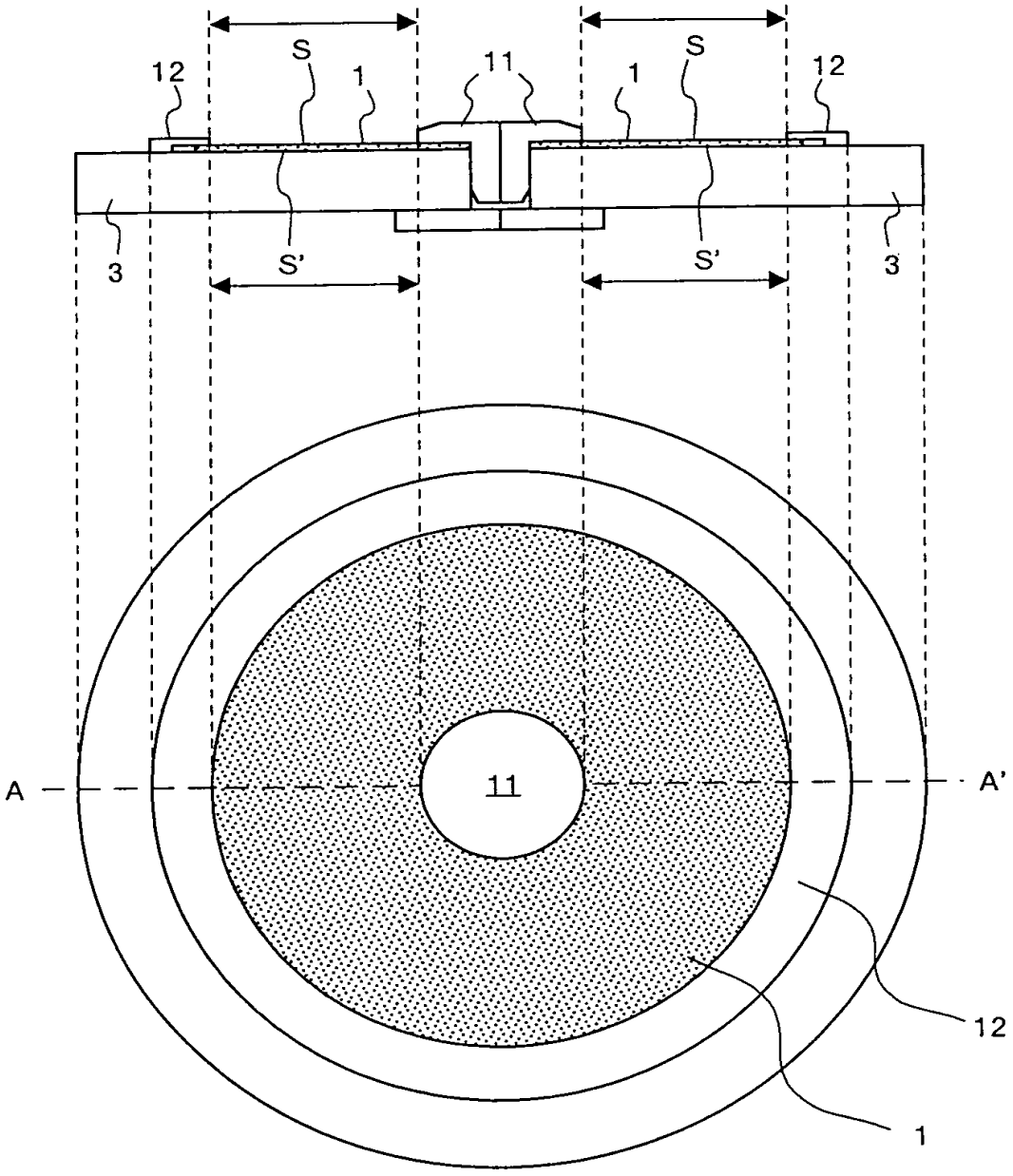

FIG.4

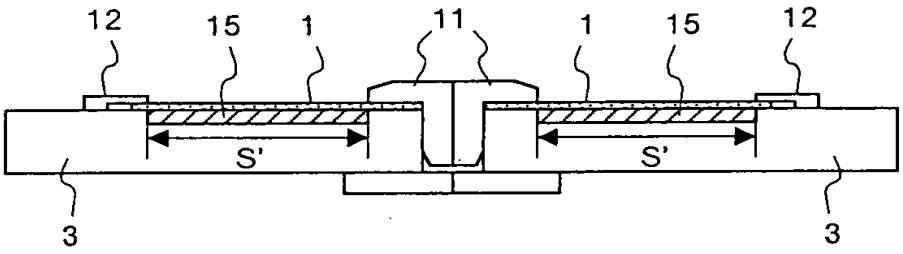

FIG.5

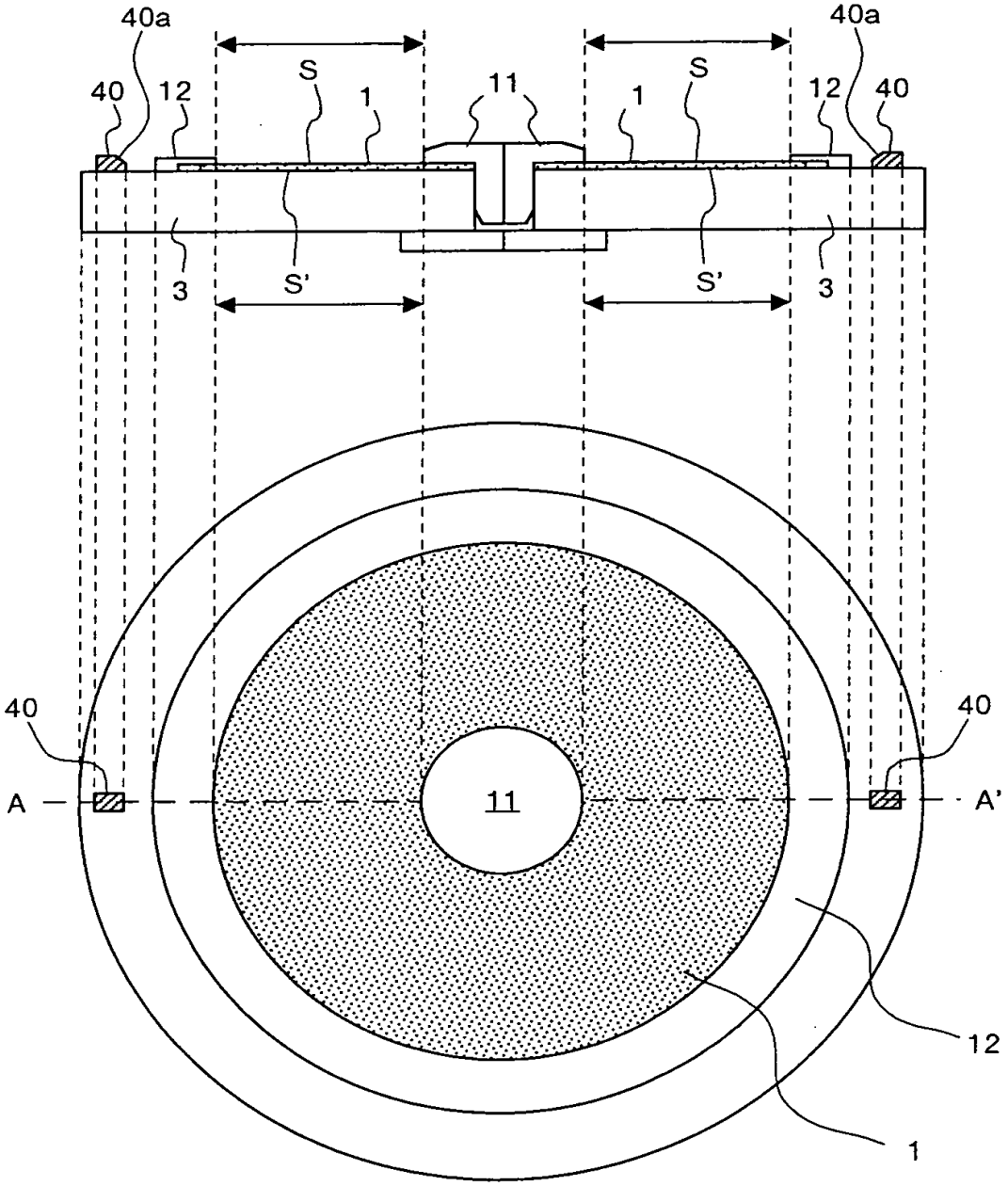

FIG.6

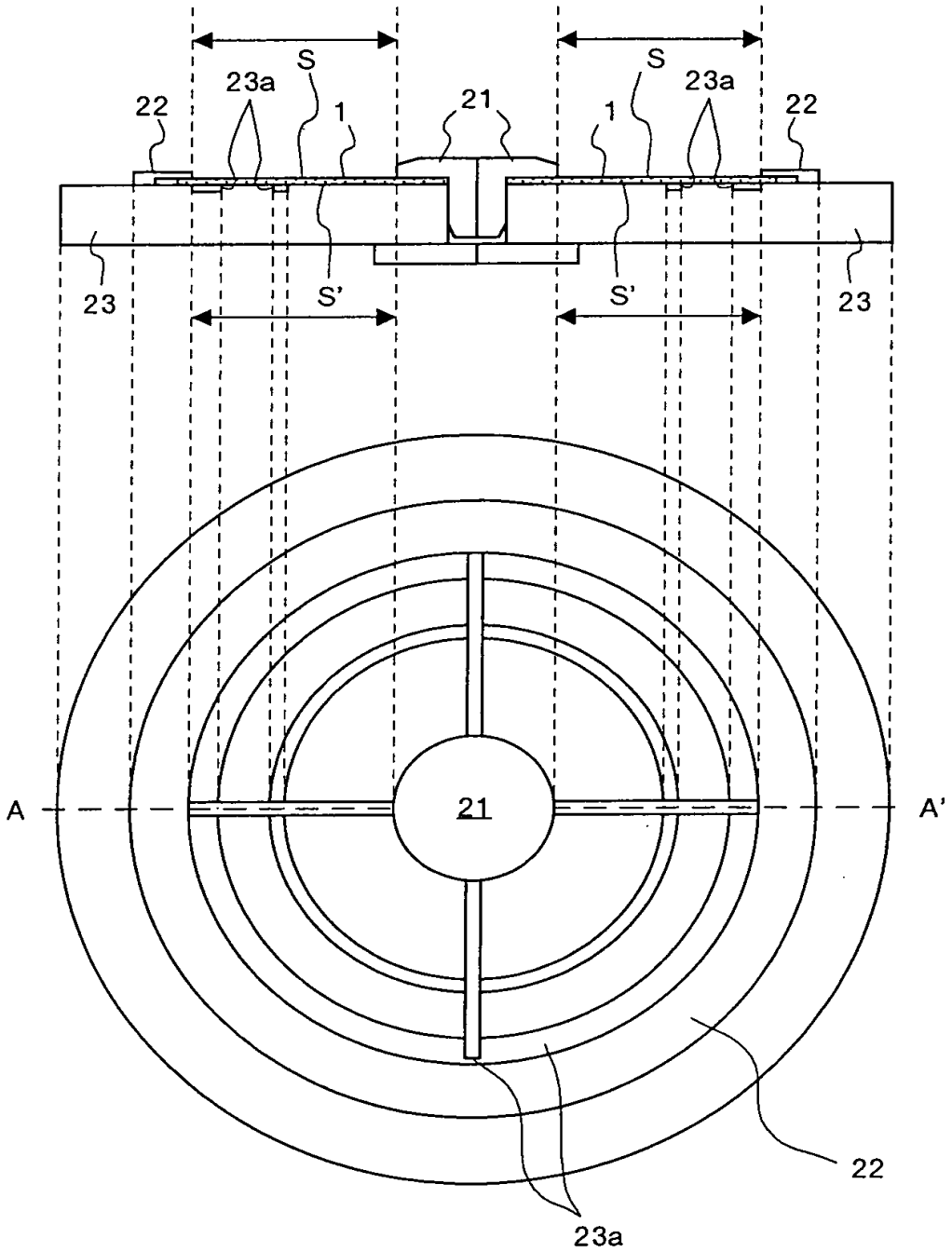

FIG.7

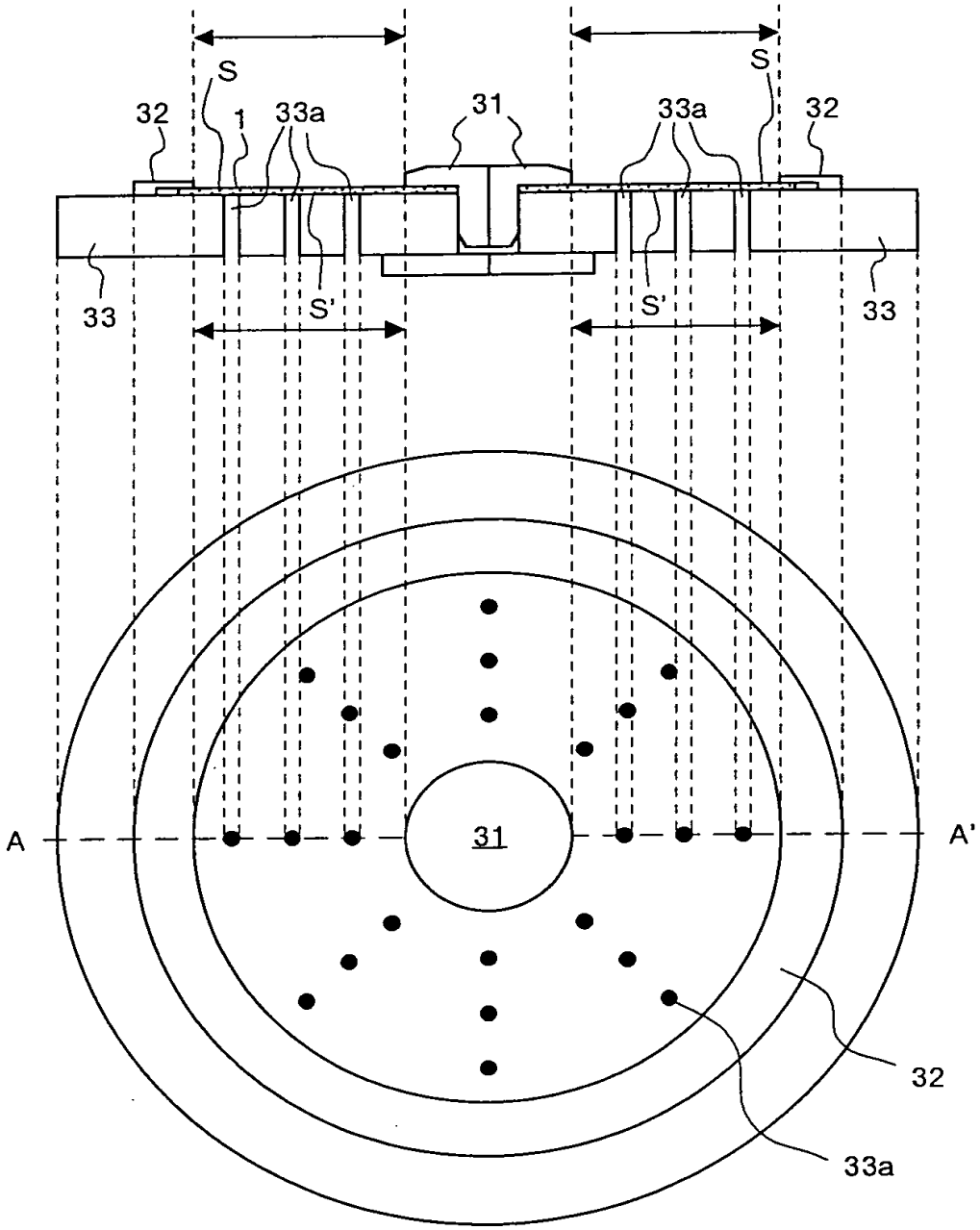

FIG.8

MAXIMUM WARPING AMOUNT OF SUBSTRATE [μm]	THICKNESS OF SUBSTRATE				
	0.3mm	0.6mm	0.7mm	1.2mm
CONVENTIONAL TECHNOLOGY	MEASUREMENT IMPOSSIBLE	−550	−540	−100
EMBODIMENT①	−350	−300	−290	−90
EMBODIMENT②	−340	−290	−280	−85
EMBODIMENT③−1	−340	−290	−280	−85
EMBODIMENT③−2	−350	−300	−290	−90

FIG.9

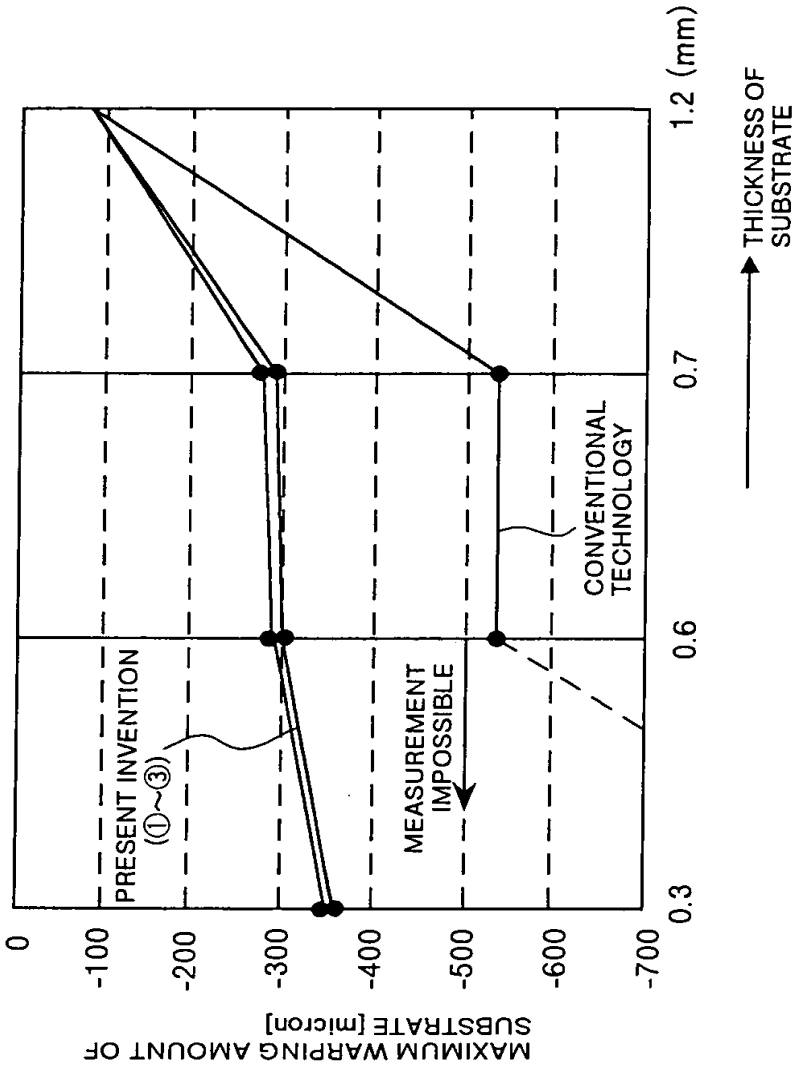
MAXIMUM WARPING AMOUNT OF SUBSTRATE [micron]
0
-100
-200
-300
-400
-500
-600
-700
PRESENT INVENTION (①~③)
MEASUREMENT IMPOSSIBLE
CONVENTIONAL TECHNOLOGY
0.3
0.6
0.7
1.2 (mm)
THICKNESS OF SUBSTRATE

FIG.10

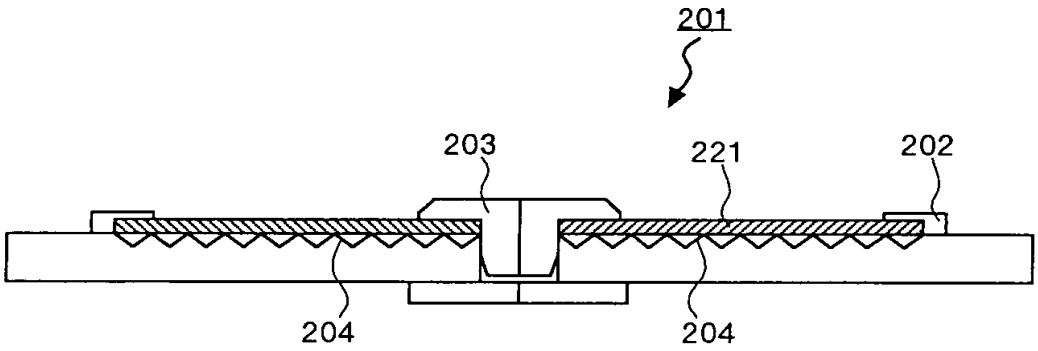

FIG.11

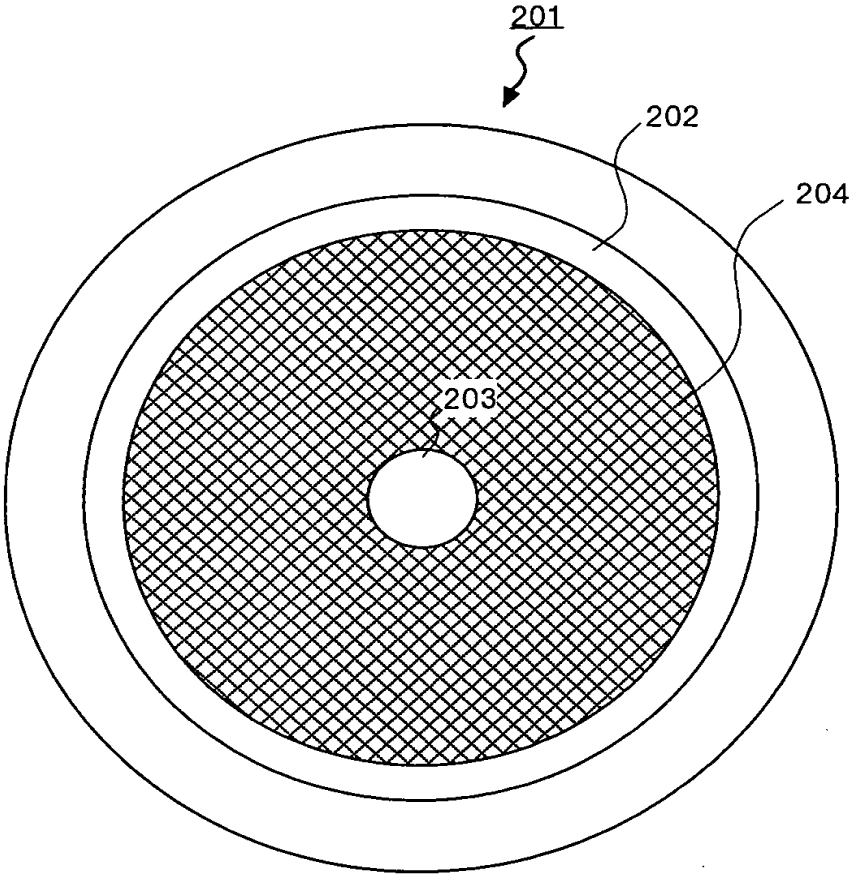

FIG.12

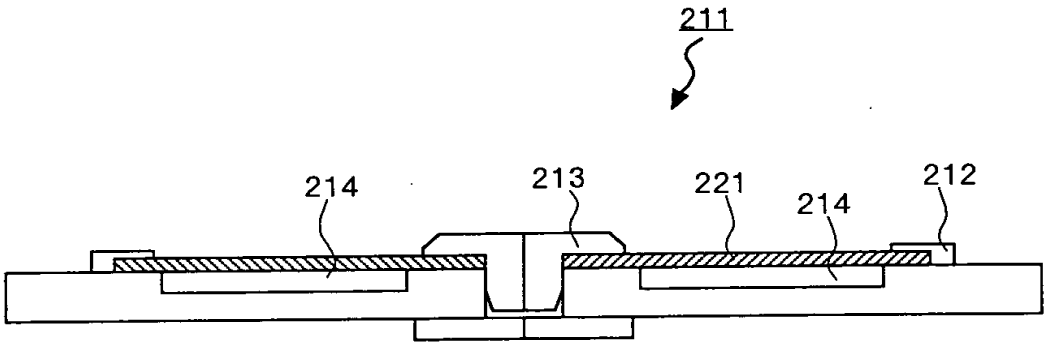

FIG.13

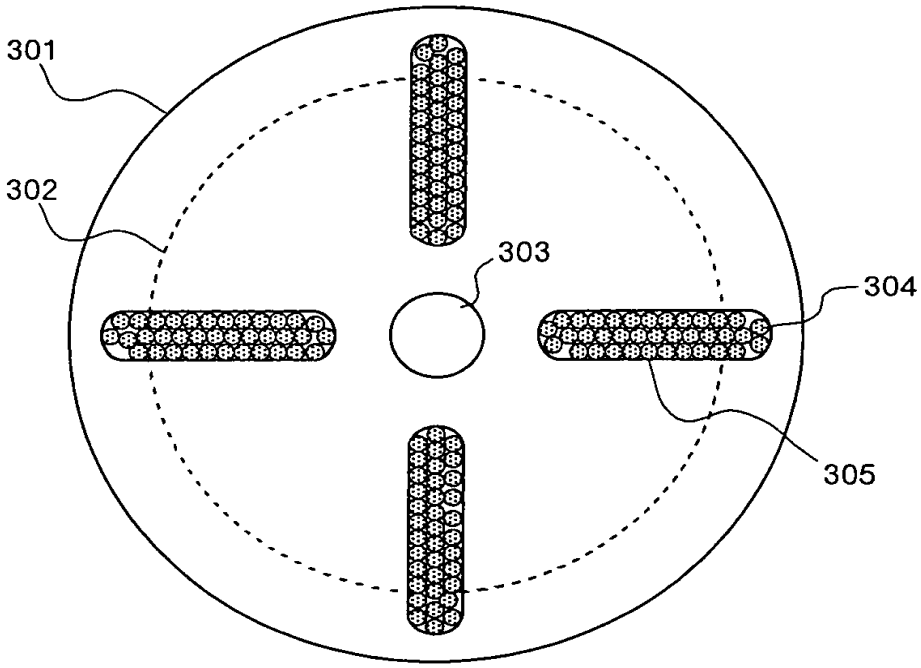

FIG.14

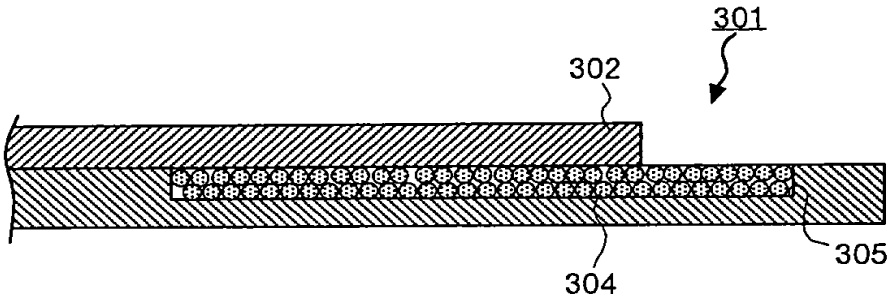

FIG.15

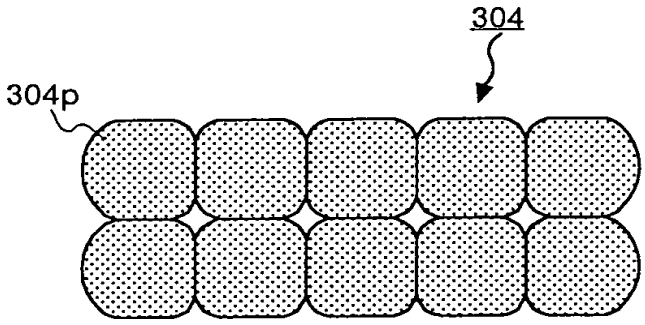

FIG.16

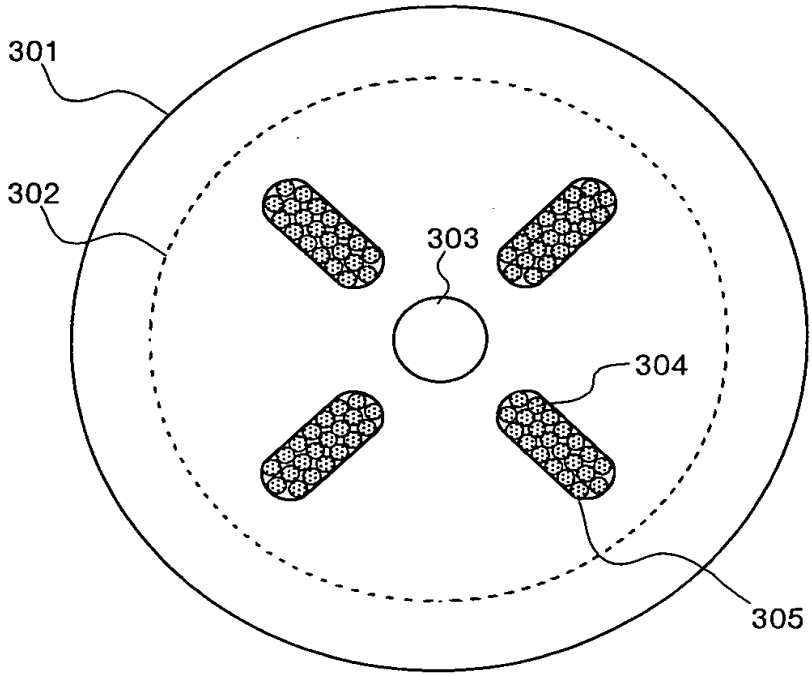

FIG.17

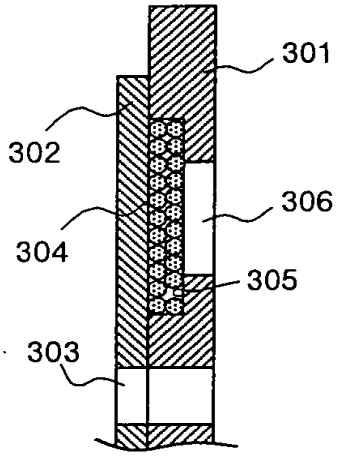

FIG.18

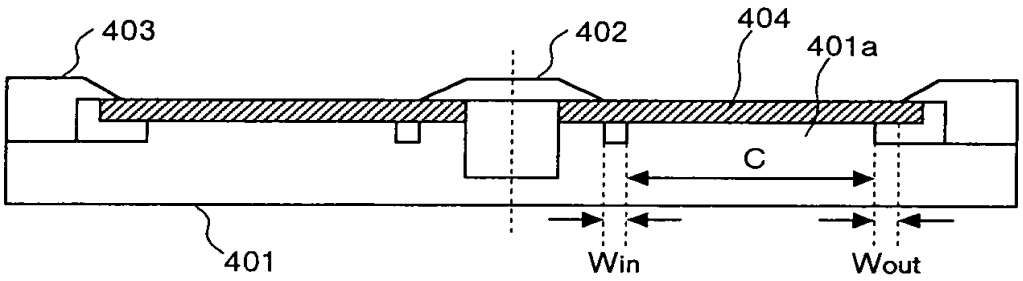

FIG.19

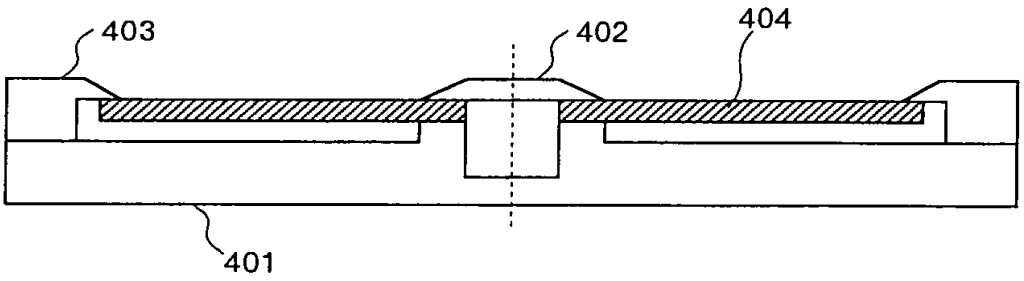

FIG.20

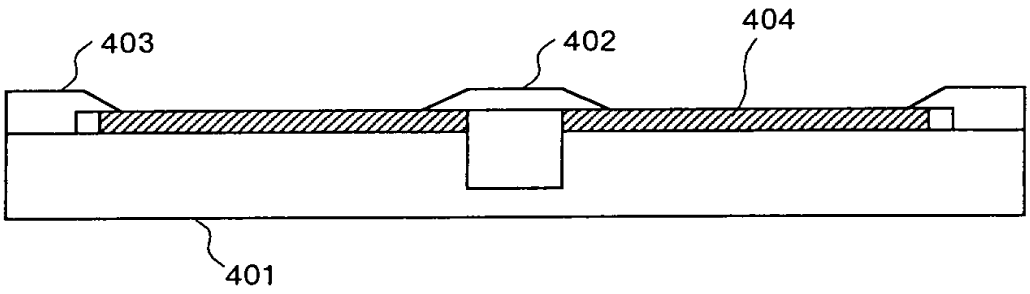

FIG.21

SUBSTRATE OR FILM-FORMED LAYER	MATERIAL	THICKNESS
REFLECTION LAYER	Al ALLOY	160nm
UPPER BASE PROTECTION LAYER	$ZnS \cdot SiO_2$	30nm
RECORDING LAYER	Ag-In-Sb-Te	20nm
LOWER BASE PROTECTION LAYER	$ZnS \cdot SiO_2$	180nm
SUBSTRATE	POLYCARBONATE	0.6mm

FIG.22

TYPES OF SUBSTRATE HOLDER	WARPING RATE OF SUBSTRATE (μm)
SUBSTRATE HOLDER SHOWN IN FIG.18	100
SUBSTRATE HOLDER SHOWN IN FIG.19	>400
SUBSTRATE HOLDER SHOWN IN FIG.20	100

FIG.23

NO.	WIDTH Win FROM AN INNER MASK TO A SUBSTRATE HOLDER EDGE (mm)	WIDTH Wout FROM AN INNER MASK TO A SUBSTRATE HOLDER EDGE (mm)	WARPING AMOUNT OF THE SUBSTRATE (μm)	A NUMBER OF UNSUCCESSFULLY LOADED SUBSTRATES AMONG 100 SHEETS CONTINUOUSLY FORMED
1	4	1	100	0
2	4	0	100	20
3	4	0.5	100	0
4	4	3	100	0
5	4	5	100	0
6	4	6	150	0
7	4	7	200	0
8	1	1	100	20
9	2	1	100	0
10	5	1	100	0
11	7	1	100	0
12	10	1	100	0
13	11	1	120	0
14	12	1	150	0

FIG.24

NO.	TAPER ANGLE θ IN SUBSTRATE HOLDER EDGE (deg.)	WARPING AMOUNT OF THE SUBSTRATE (μm)	PRESENCE OF A DAMAGE ON A SUBSTRATE CAUSED BY SUBSTRATE HOLDER EDGE SECTION
15	0	100	YES
16	0.5	100	YES
17	1.0	100	NO
18	1.5	100	NO
19	2.0	100	NO
20	2.5	150	NO
21	3.0	200	NO

FIG.25

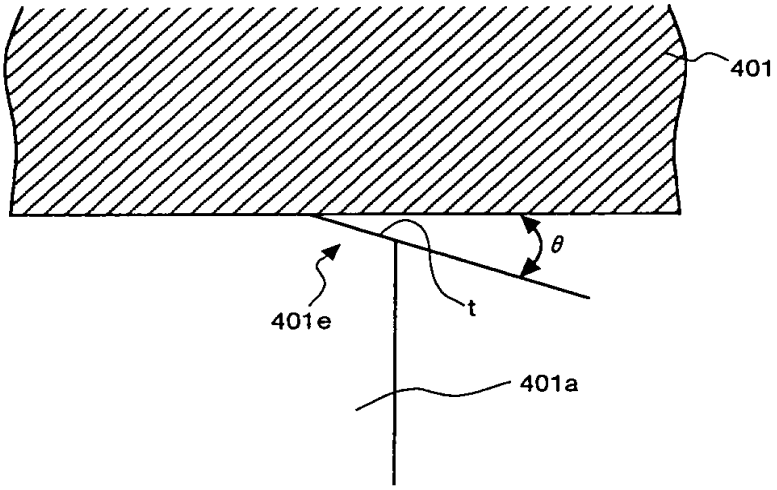

FIG.26

NO.	WIDTH H OF SILICON RUBBER IN SUBSTRATE HOLDER EDGE (mm)	WARPING RATE OF A SUBSTRATE (μm)	PRESENCE OF A DAMAGE ON A SUBSTRATE CAUSED BY SUBSTRATE HOLDER EDGE SECTION
22	0	100	YES
23	0.1	100	NO
24	0.3	100	NO
25	0.5	100	NO
26	0.6	120	NO
27	0.7	150	NO

FIG.27

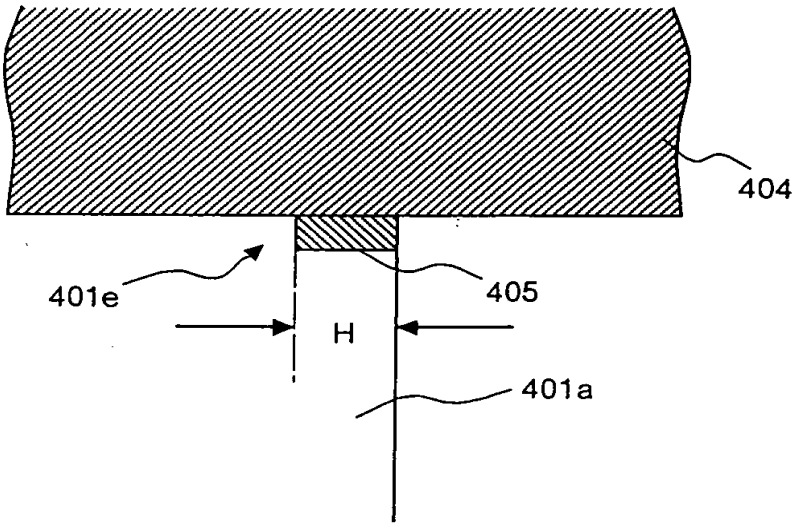

FIG.28

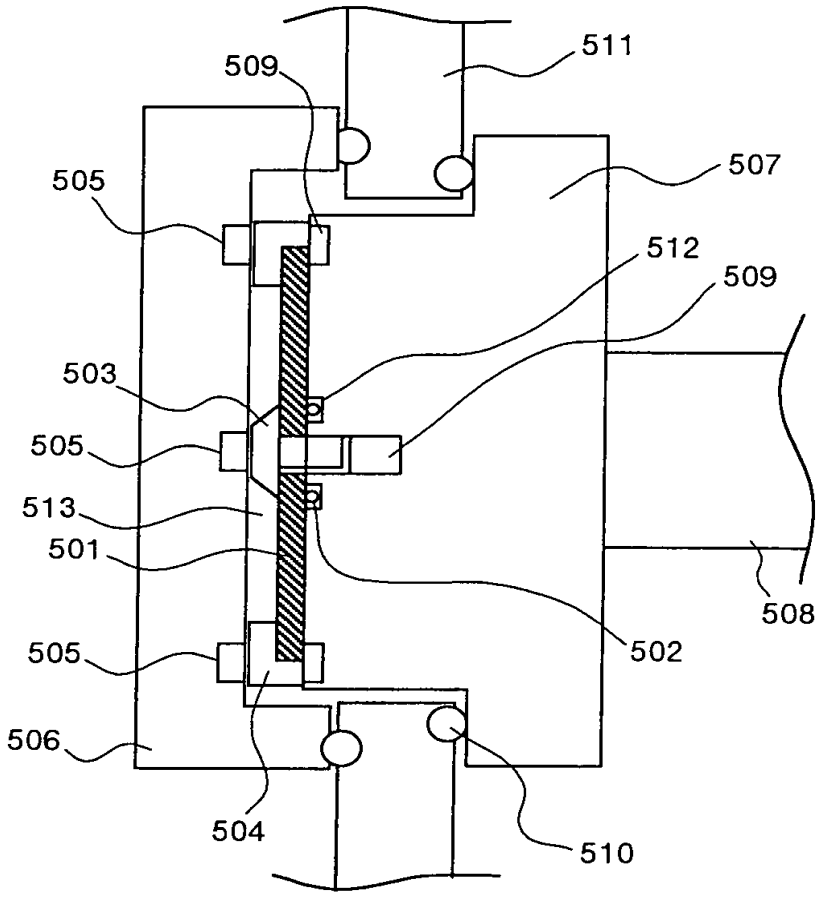

FIG.29

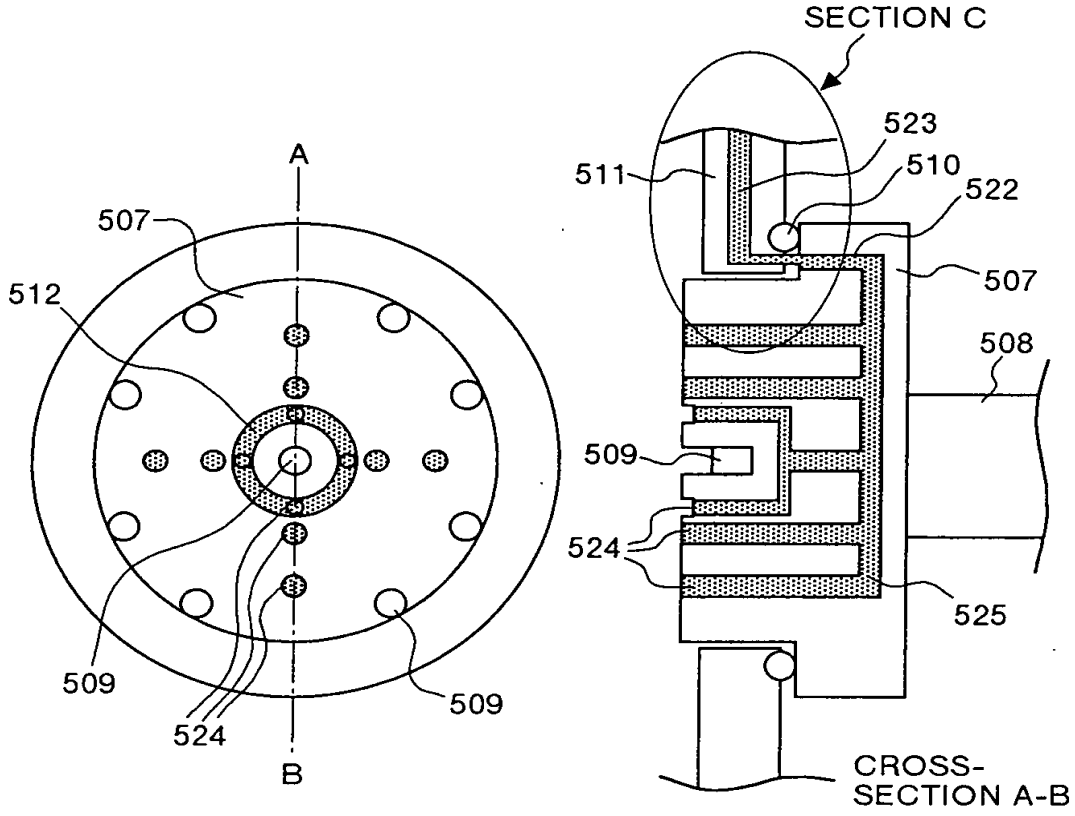
SECTION C
523
511
510
522
507
508
509
524
525
A
507
512
509
524
509
B
CROSS-
SECTION A-B

FIG.30

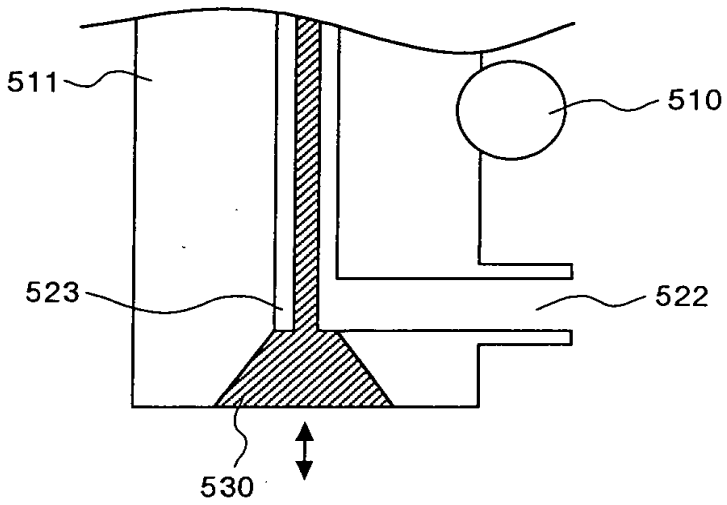

FIG.31

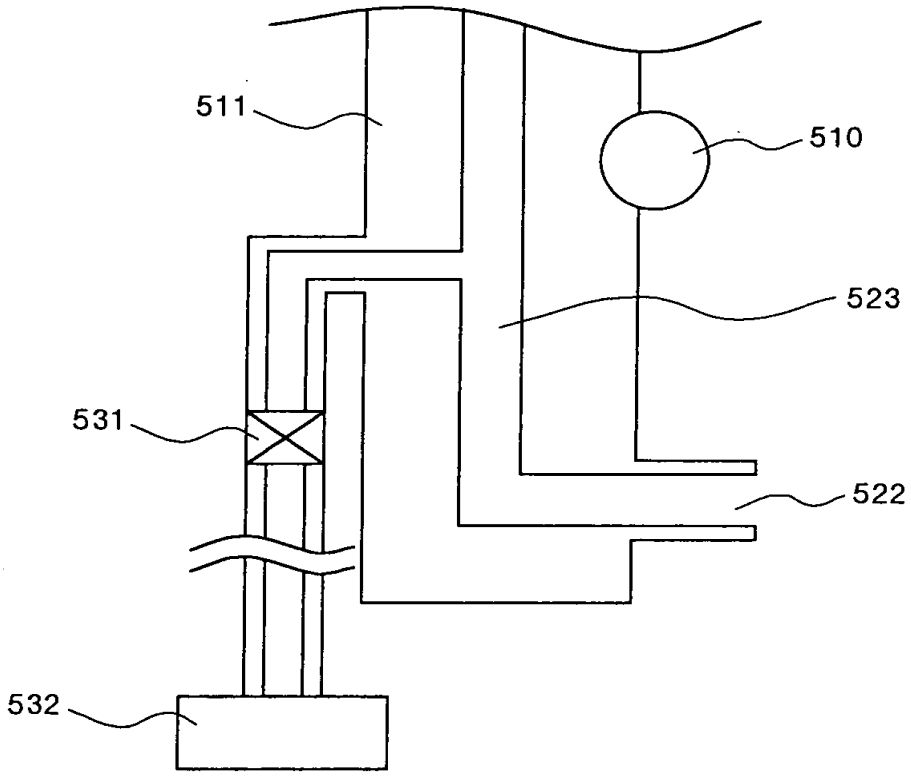

FIG.32

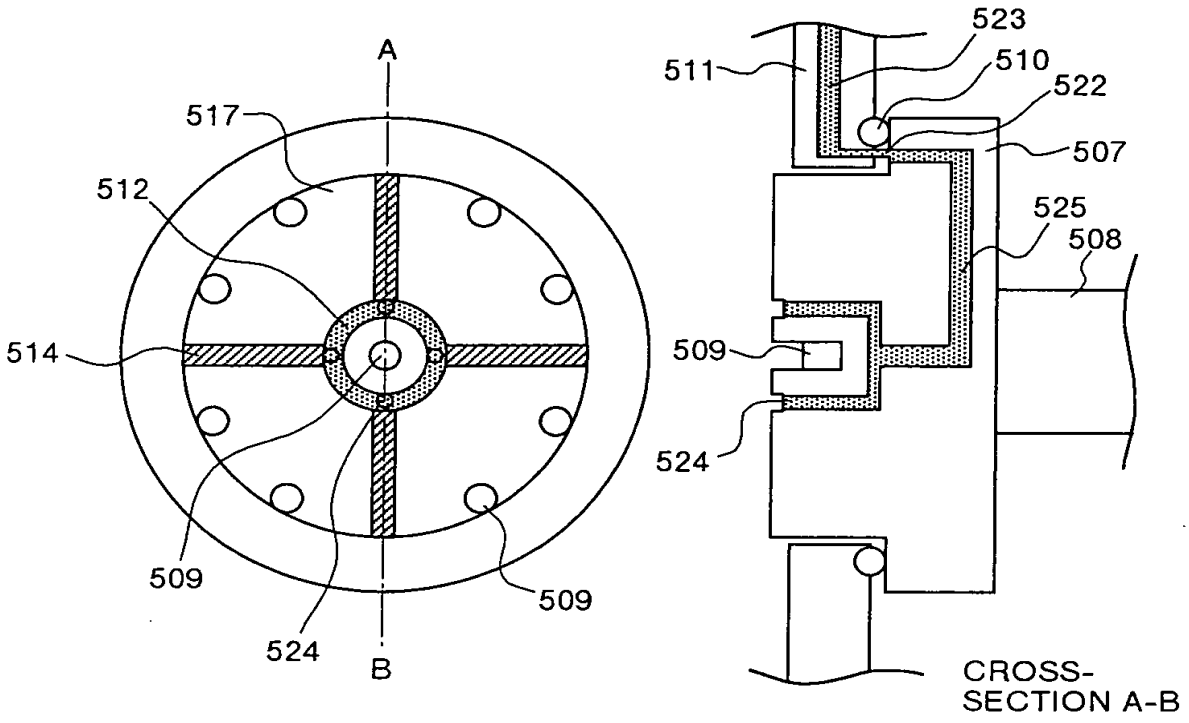
A
517
512
514
509
524
B
509
523
511
510
522
507
525
508
509
524
CROSS-
SECTION A-B

FIG.33

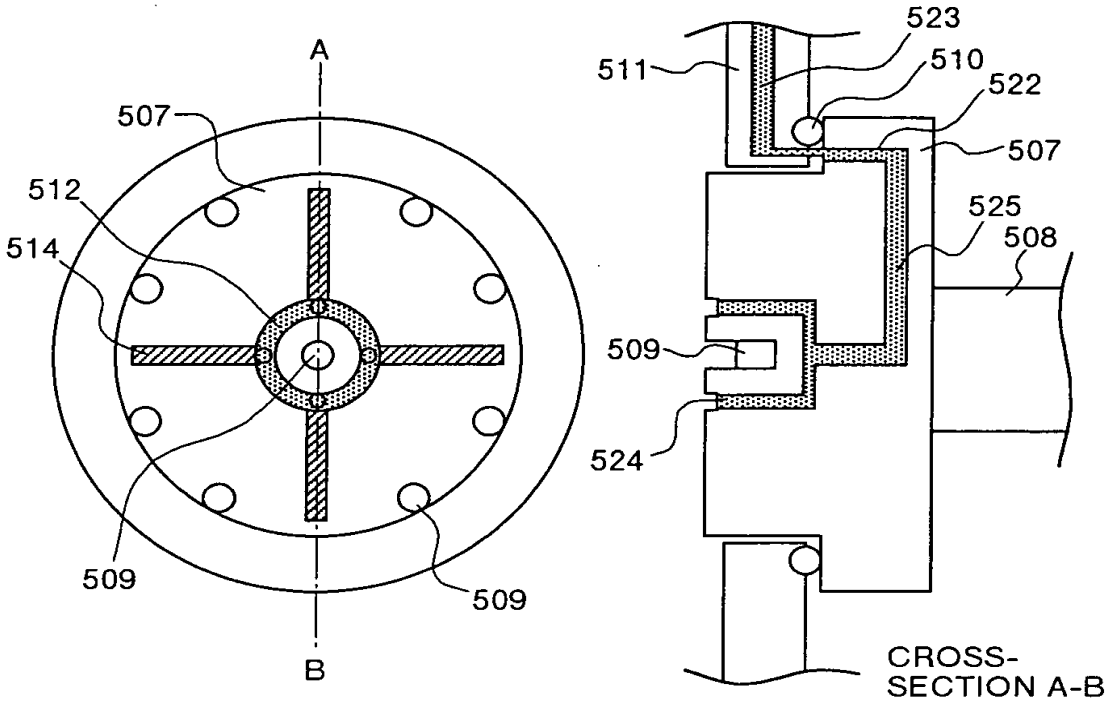
A
507
512
514
509
509
B
523
511
510
522
507
525
508
509
524
CROSS-
SECTION A-B

FIG.34

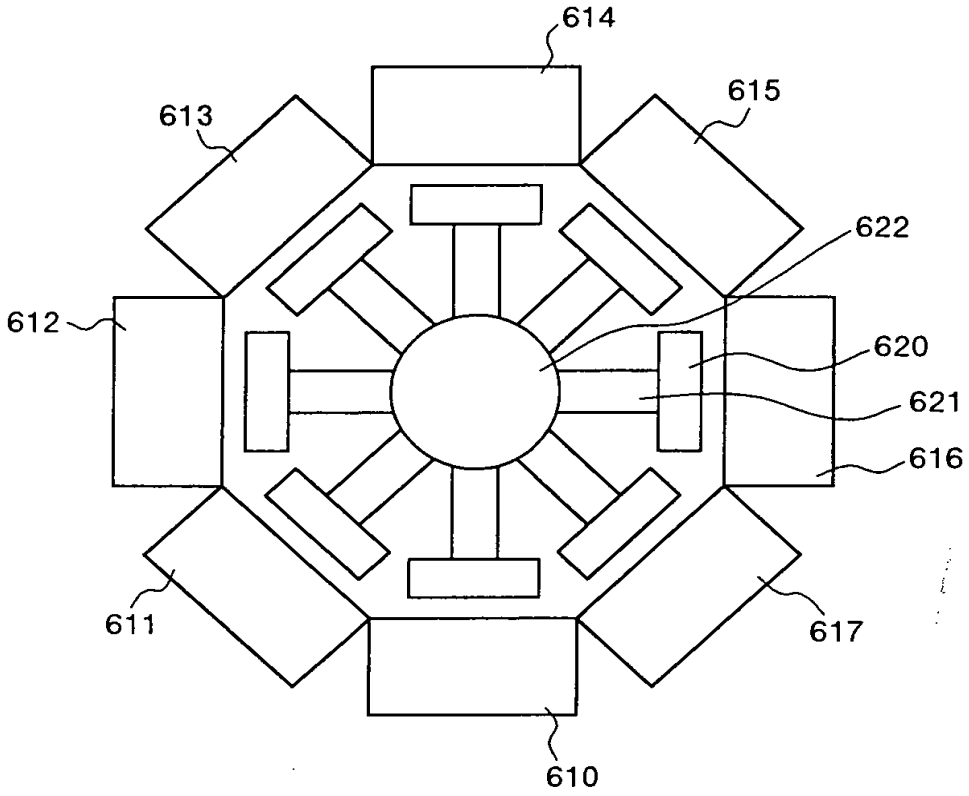

FIG.35

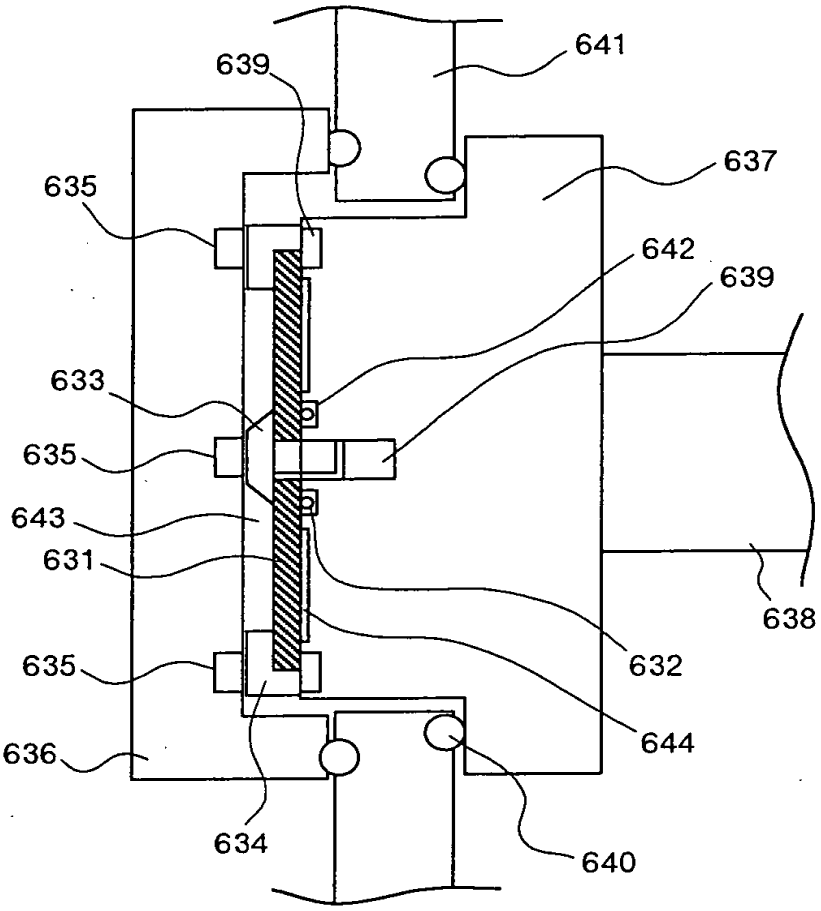
641
639
637
635
642
639
633
635
643
631
638
632
635
644
636
634
640

FIG.36

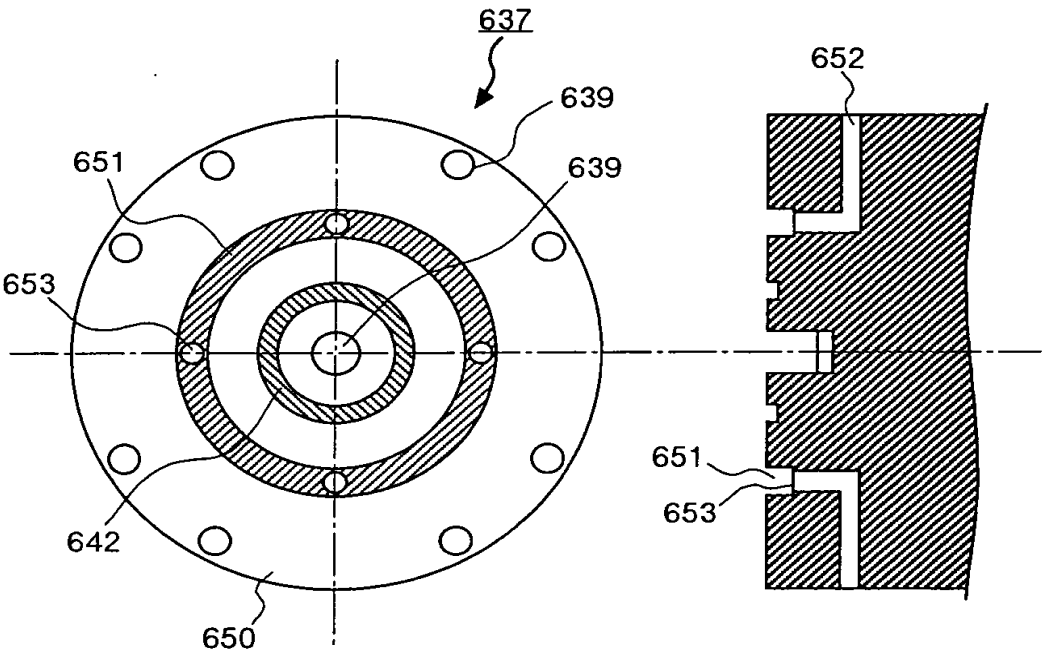

FIG.37

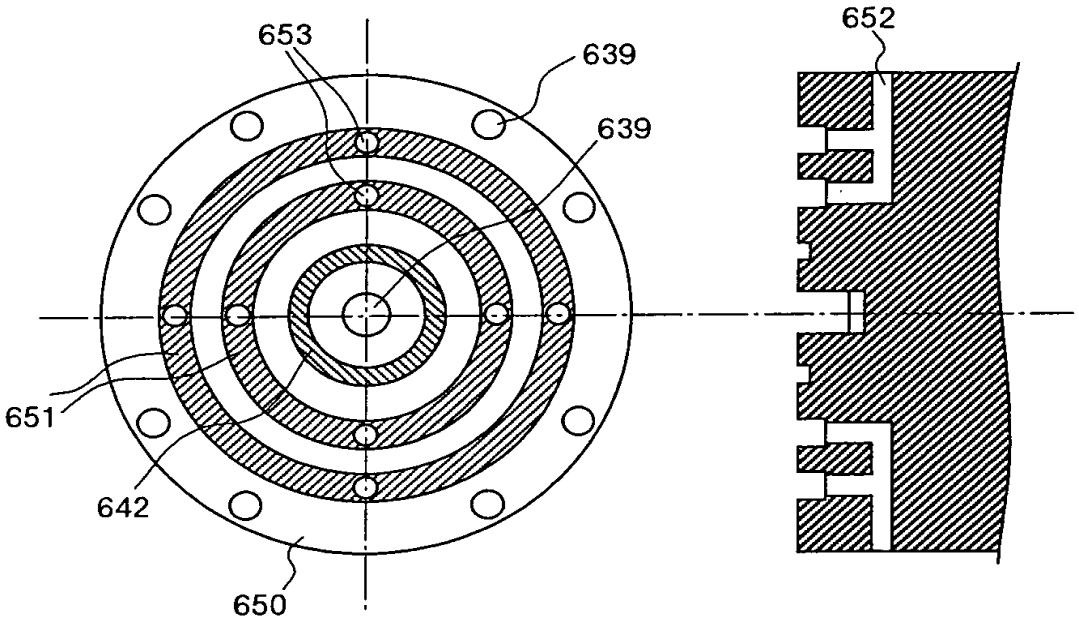

FIG.38

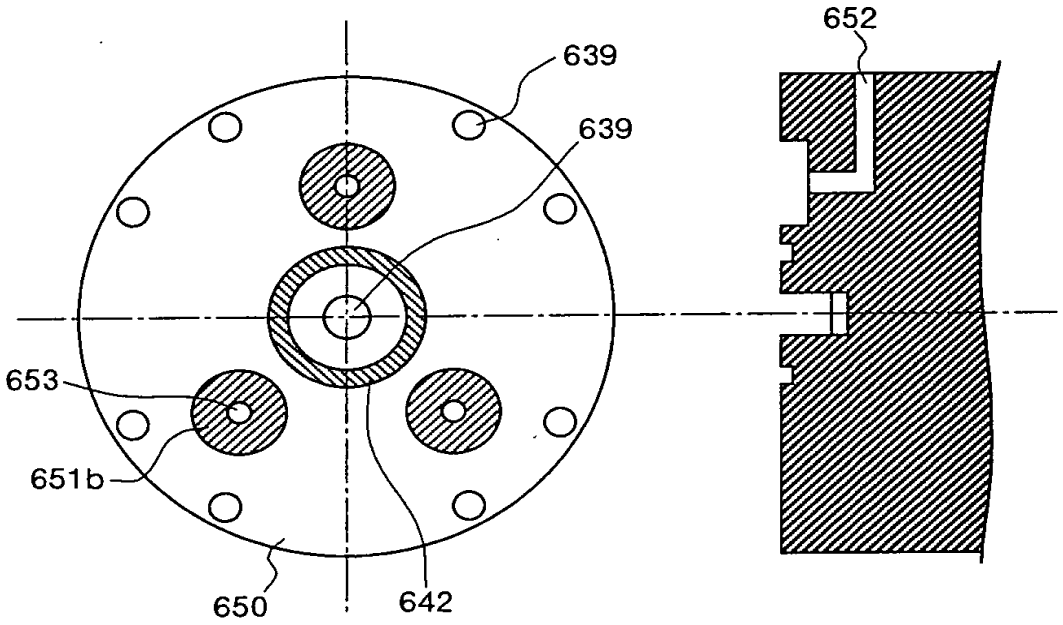

FIG.39

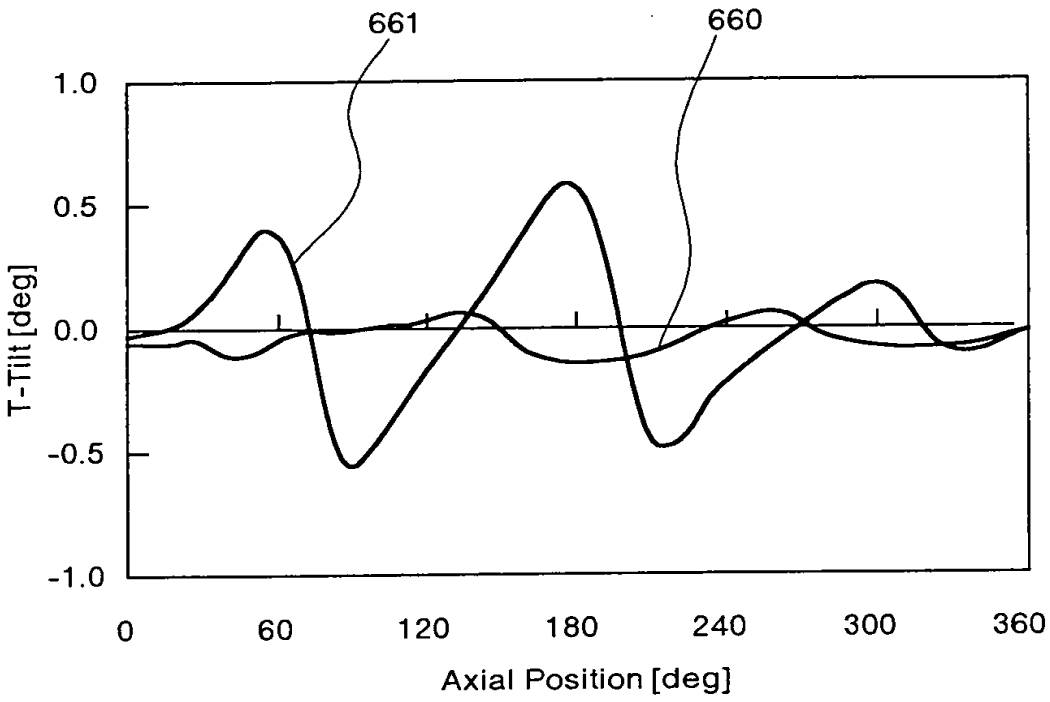
661
660
1.0
0.5
0.0
-0.5
-1.0
T-Tilt [deg]
0
60
120
180
240
300
360
Axial Position [deg]

FIG.40

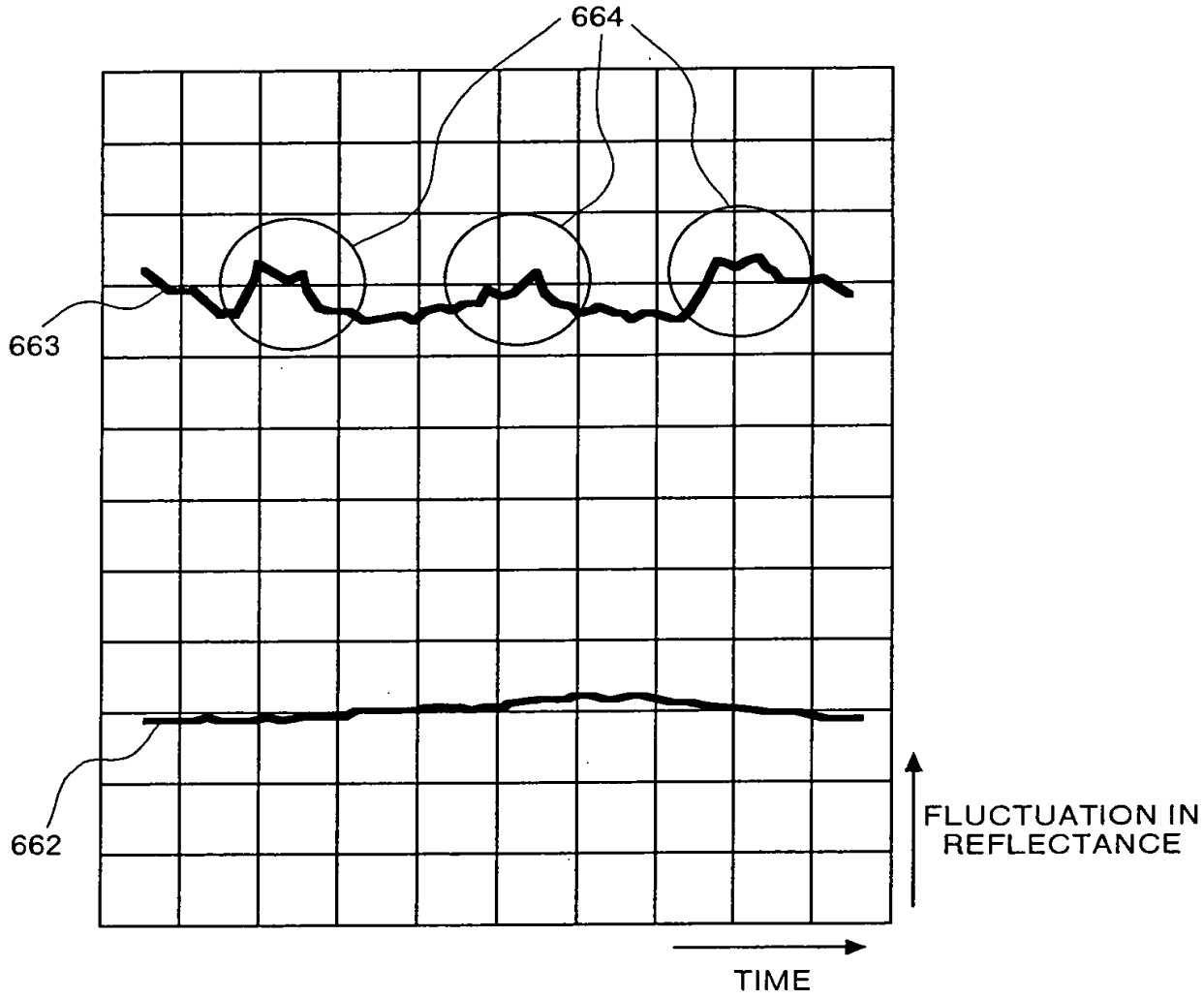

FIG.41

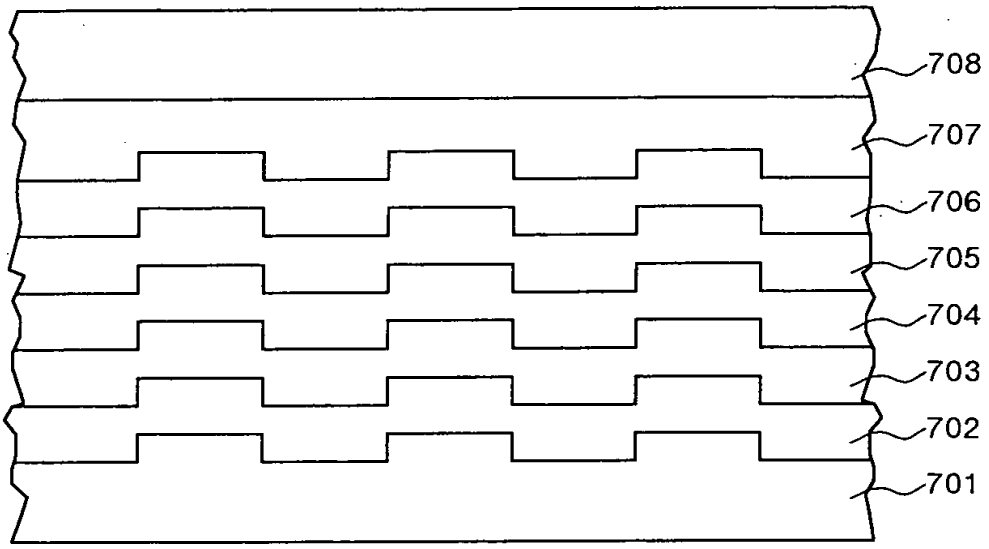

FIG.42